

**What Is Claimed Is:**

1. An industrial delta robot having an arm system rotatable in space, comprising a base section, a moveable plate, several multi-jointed pull rods and a telescopic axle arranged between the base section and the moveable plate, opposite ends of the pull rods and the telescopic axle being respectively connected with the base section and the moveable plate, the telescopic axle comprising an inner axle and an outer tube arranged on the inner axle and displaceable in a longitudinal direction, and wherein a pair of end-to-end torsional rigid bushings are arranged in a stationary manner on the outer tube in which the inner axle is mounted to be displaceable, confronting inner ends of the bushings being slightly spaced apart to define an annular gap forming a transversely extending lubrication pocket for continuous lubrication of the inner axle during movement relative to the bushings.

2. The industrial delta robot according to claim 1, wherein the inner axle has axial grooves that guide the inner axle during displacement in the torsional rigid bushings.

3. The industrial delta robot according to claim 1, wherein the outer tube is arranged on the moveable plate and the inner axle is arranged on the base.

4. A method for the manufacture of an industrial delta robot having an arm system rotatable in space, comprising the steps of: arranging a base section and a moveable plate in the arm system; arranging several multi-jointed pull rods and a telescopic axle between the base section and the moveable plate; connecting the opposite ends of the pull rods and the telescopic axle respectively with the base section and the moveable plate, the telescopic axle comprising an inner axle and an outer tube arranged on the inner axle and displaceable in a longitudinal direction,

arranging a pair of end-to-end torsional rigid bushings in a stationary manner on the outer tube in which the inner axle is mounted to be displaceable, spacing the confronting inner ends of the bushings apart to define an annular gap forming a transversely extending lubrication pocket, and continuously lubricating the inner axle through the pocket during movement relative to the bushings.

5. An industrial delta robot having an arm system rotatable in space, comprising a base section, a moveable plate, several multi-jointed pull rods and a telescopic axle arranged between the base section and the moveable plate, opposite ends of the pull rods and of the telescopic axle being respectively connected with the base section and the moveable plate, the telescopic axle comprising an inner axle and an outer tube arranged on the inner axle and displaceable in a longitudinal direction, an end section of the outer tube being connected to the moveable plate and an end section of the inner axle being connected to the base section, a pair of end-to-end torsional rigid bushings being arranged in a stationary manner on the outer tube in which the inner axle is mounted to be displaceable, the bushings being spaced apart at confronting inner ends to form a transversely extending lubrication pocket for continuous lubrication of the inner axle during movement relative to the bushings, the bushings and a guiding device being firmly attached on the inner axle at an end opposite the end section thereof such that part of the guiding device is arranged to abut the inside of the outer tube.

6. An industrial delta robot according to claim 5, wherein the guiding device is arranged pre-tensioned against the inside of the outer tube.

7. An industrial delta robot according to claim 5, wherein the outer tube is arranged on the moveable plate and the inner axle is arranged on the base section.

8. An industrial delta robot according to claim 5, wherein the guiding device is disc-shaped.

9. An industrial delta robot according to claim 5, wherein the guiding device comprises at least three shoulders that abut the inside of the outer tube and which are evenly spaced around the periphery of the guiding device.

10. A method for the manufacture of an industrial delta robot having an arm system rotatable in space, comprising the steps of: arranging a base section and a moveable plate in the arm system; arranging several multi-jointed pull rods and a telescopic axle between the base section and the moveable plate; connecting the opposite ends of the pull rods and the telescopic axle respectively with the base section and the moveable plate, the telescopic axle comprising an inner axle having an end section connected to the base section and an outer tube arranged on the inner axle and displaceable in a longitudinal direction, the outer tube having an end section connected to the moveable plate, and firmly attaching a guiding device on the inner axle at an end opposite the end section thereof such that part of the guiding device is arranged to abut the inside of the outer tube.